

REMARKS

A Request For Continued Examination (RCE) has been filed to authorize examination of the amended claims in view of the final rejection status.

In the Office Action, dated December 20, 2006, all of the present claims, 1-15 and 17-20 were rejected as unpatentable over U.S. 6,960,847 Suzuki et al. in view of U.S. 5,434,549 Hirabayashi et al.

In response, the claims have been amended to clarify further distinguishing features of the claimed subject matter over the cited prior art. For example, all claims now recite a magnetic inertial force generator, which the present invention is and the prior art is not. Suzuki and Hirabayashi are electromagnetic actuators having a central shaft connected to a movable armature, the shaft extending outside the housing for actuating an external mechanism. The present invention features an armature that, in operation, reciprocates within a housing to provide an alternating inertia force, as the claims recite, that is transmitted by the housing to apply or reduce vibrations in a connected component.

Claim 1 is amended to include these features and others, including that the permanent magnets are mounted on “an axially extending exterior of an axially extending magnetic core that supports the magnets over approximately their full lengths”. Further, the claim calls for the magnets to have “radially extending flux lines passing through the coils and the magnets and maintaining a continuous flux path between the magnets and the core through the mounting of the magnets on the axially extending exterior of the magnetic core over the approximately full lengths of the magnets”. These features provide an extended area of contact between the magnets and the core on which the magnets are mounted and provide for radial flux transmission over the full lengths of the magnets and the associated axial surface of the core. This compares to Suzuki (FIG. 5) wherein the magnetic yoke 31, connecting with axial inner ends of the radially inner portions of the magnets 32, 33, carries the flux lines axially between the magnets.

It should be noted that the shaft 24 is not described as having magnetic properties (see column 7, lines 37-62) and it would not, since this might carry magnetic flux energy outside the desired flux path. Accordingly, the shaft 24 cannot be considered to be part of the axially extending exterior of the magnetic core on which the magnets are mounted and which supports the magnets over approximately their full axial lengths.

Claim 2, as amended, recites that "the magnets are cylindrical and the core is a steel tube". Claims 3-12 are dependent on claim 2 and recite additional features of the magnetic inertial force generator.

Claim 13 is similar to claim 1 but differs in calling for the armature to include "spaced cylindrical permanent magnets fixedly mounted on . . . an axially extending magnetic tube" (acting as the core). Claims 14, 15 and 17-20 are dependent on claim 13 and recite additional features of the magnetic inertial force generator.

For all the foregoing reasons, amended Claims 1-15 and 17-20 are believed to clearly distinguish non-obvious patentable features of the present invention from the teachings of the prior art. Reconsideration and allowance of the claims as amended is accordingly requested.

This amendment is believed to be fully responsive to the issues raised in the present Office Action and to place this application in condition for allowance. Favorable action is requested.

Respectfully submitted,

By 

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